

**SYLLABUS FOR PG ENTRANCE EXAMINATION:****PHARMACEUTICAL SCIENCES**

**Natural Products:** Pharmacognosy & Phytochemistry – Chemistry, tests, isolation, characterization and estimation of phytopharmaceuticals belonging to the group of Alkaloids, Terpenoids, Steroids, Bioflavonoids, Purines, Guggul lipids. Pharmacognosy of crude drugs that contain the above constituents. Standardization of raw materials and herbal products. WHO guidelines. Quantitative microscopy including modern techniques used for evaluation. Tissue culture.

**Pharmacology:** General pharmacological principles including Toxicology. Drug interaction. Pharmacology of drugs acting on Central nervous system, Cardiovascular system, Autonomic nervous system, Gastro intestinal system and Respiratory system. Pharmacology of Autocoids, Hormones, Hormone antagonists, chemotherapeutic agents including anticancer drugs. Bioassays, Immuno Pharmacology. Drugs acting on the blood & blood forming organs. Drugs acting on the renal system.

**Medicinal Chemistry:** Structure, nomenclature, classification, synthesis, SAR and metabolism of the following category of drugs, which are official in Indian Pharmacopoeia and British Pharmacopoeia. Introduction to drug design. Stereochemistry of drug molecules. Hypnotics and Sedatives, Analgesis, NSAIDS, Neuroleptics, Antidepressants, Anxiolytics, Anticonvulsants, Antihistaminics, Cardio Vascular drugs- Adrenergic & Cholinergic drugs, Cardiotonic agents, Diuretics, Antihypertensive drugs, Hypolycemic agents, Antilipemic agents, Coagulants, Anticoagulants, Antiplatelet agents. Chemotherapeutic agents- Antibiotics, Antibacterials, Sulphadruugs. Antiproliferative drugs, Antiviral, Antitubercular, Antimalarial, Anticancer, Antiamoebic drugs. Preparation and storage and uses of official Radiopharmaceuticals, Vitamins and Hormones.

**Pharmaceutics:** Development, manufacturing standards, Q.C limits, labeling, as per the pharmacopoeal requirements. Storage of different dosage forms and new drug delivery systems. Biopharmaceutics and Pharmacokinetics and their importance in formulation. Derived properties of powders, colloidal properties and their application in ophthalmic preparations, and parenterals. Formulation and preparation of cosmetics- lipstick, shampoo, creams, nail preparations and dentifrices. Pharmaceutical calculation.

**Pharmaceutical Jurisprudence:** Drugs and cosmetics Act and rules with respect to manufacture, sales and storage. Pharmacy Act. Pharmaceutical ethics.

**Pharmaceutical Analysis:** Principles, instrumentation and applications of the following: Absorption spectroscopy (UV, visible & IR). Flame photometry. Conductometry and Polarography. Pharmacopoeial assays. Principles of NMR, ESR, Mass spectroscopy. X-ray diffraction analysis and different chromatographic methods.

**Biochemistry:** Biochemical role of hormones, Vitamins, Enzymes, Nuclie acids, General principles of immunology. Metabolism of carbohydrate, lipids, proteins. Methods to determine, kidney & liver function. Lipid profiles.

**Clinical Pharmacy:** Therapeutic Drug Monitoring Dosage regimen in Pharmacy and Lactation, Pediatrics and Geriatrics. Renal and hepatic impairment. Drug- Drug interactions and Drug - food interactions, Adverse Drug reactions. Medication History, interview and Patient counseling.